

Asset Management

Case Study in Ilfeld, New Mexico

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Prepared by



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INTRODUCTION

In 2006, the New Mexico Water Infrastructure Investment Team (WIIT) tasked the New Mexico Environmental Finance Center (NMEFC), the New Mexico Rural Water Association (NMRWA) and the Rural Community Assistance Corporation (RCAC), with conducting a pilot study for three New Mexico communities. The purpose of the pilot study was to develop a process that could be used to assist New Mexico's drinking water and wastewater systems in implementing new administrative and management procedures to adapt to the regulatory, water quality and quantity challenges of the future. The three activities selected for the pilot study were asset management, water audits, and financial planning. The goal was to move these systems to long-term sustainability.

The NMEFC was tasked with developing an asset management manual for water and wastewater systems, with a focus on the needs of smaller systems. In addition the NMEFC was tasked with piloting the approach for three communities. The three systems that were selected were Arenas Valley Water Development Association, Bosque Farms Water Supply System, and Ilfeld Mutual Domestic Water Consumers Association. The three water systems were selected based on their relative size, number of connections, and location throughout the state. Map 1 is a vicinity map showing the location of the three systems that were the focus of the case studies.

Map 1 – Vicinity Map



CASE STUDY: ILFELD

In 1992, the Ilfeld Mutual Domestic Water Consumers' Association (MDWCA) was created in San Miguel County. This system is located approximately 40 miles northeast of Santa Fe along Interstate 25.

Background Regarding The Water System

The Ilfeld MDWCA is a relatively small system with approximately 100 service connections. The system is served by two ground water wells and one ground storage tank that holds approximately 25,000 gallons. The system does have a disinfected system. The distribution system is relatively new, built in 1980s; it contains approximately 4 miles of ductile iron pipe, 17 fire hydrants, and 35 valves.

Initial Starting Point

One of the first steps in the process is to determine the starting point in terms of data, information, and existing knowledge. The NMEFC met with staff and board members of the Ilfeld MDWCA to make this assessment. During the initial meetings, the NMEFC determined Ilfeld had the following resources:

- Proposed construction drawings.
- Electronic billing records, and.
- Operator and board member's knowledge.

At the beginning of the project, Ilfeld MDWCA was concerned that they did not have sufficient written documented information on the existing system.

Asset Management Checklist

As part of the asset management manual, the NMEFC developed a checklist that could be used to determine which portions of the asset management plan were completed and what the method of completion was. This checklist was completed for the Ilfeld MDWCA system. The results are presented in Table 1. Additional information regarding the methodology used to complete the asset management plan is presented in the table below.

Table 1: Asset Management Checklist for Ilfeld

Component of Asset Management	Specific Item	Completed Y or N	Method of Completion	Comments
Asset Inventory	List of Assets	Y	Access Database	
	Map of Assets	Y	GIS Map	

Component of Asset Management	Specific Item	Completed Y or N	Method of Completion	Comments
	Asset Condition Assessment	Y	Access Database	Ranked 0-5
	Remaining Useful Life of the Assets	Y	Access Database	Estimates
	Asset Value (Optional)	N		
Level of Service	Level of Service Agreement	Y	Microsoft Word Document	
Critical Assets	Criticality Analysis	Y	Access Database	
Life Cycle Costing	Operation and Maintenance Program	N	Examples provided to system, next step of the plan when more information is available	
	Repair Replacement Schedule	N	Examples provided to system, next step of the plan when more information is available	
	Capital Improvement Plan (CIP)	N		
Long-Term Funding Strategy	5 Year Financial Plan		To be completed by RCAC	
	Funding Strategy for Repair and Replacement Schedule		To be completed by RCAC Budget reserves, line item	
	Funding Strategy for CIP		To be completed by RCAC Budget reserves, line item	

Asset Inventory:

The asset inventory was created from the information gathered from proposed construction drawings, as-built engineering drawings, the operator's input, viewing the system, and published information on asset life expectancy.

The inventory was documented in two types of files, an access database and a set of maps. The Access database lists assets by type and includes: a list of assets, the asset condition assessment, the estimated remaining useful life of the assets, and the criticality analysis.

The maps of the assets were created using Geographical Information System (GIS) software called ArcGIS™ to show all the assets documented in the inventory. The GIS software can easily show different assets on one map. The data used in the maps were compiled from the proposed construction drawings, as-built record drawings, the operator's input, and by viewing the system.

Level of Service Agreement:

The Level of Service Agreement was completed by the Association and defines what the customers can expect from the Association. The document was created using Microsoft Word and includes the following components:

- Introduction
- Purpose
- Operating Cost/Invoicing
- Responsiveness
- Reliability
- Regulatory Requirements
- Quantity
- Quality
- Customer Satisfaction

Immediate Benefits of Asset Management

Ifeld found value in mapping the system because the water line locations were not in commonly expected locations in all cases. Having a single map of the system allowed them to easily locate existing water lines and plan for new lines in the future. In addition, consolidating the information regarding the system into one map, a database and a level of service agreement allowed for easy access for board members who were volunteers and did not have the time to search through historical records.

ILFELD MUTUAL DOMESTIC WATER CONSUMERS' ASSOCIATION

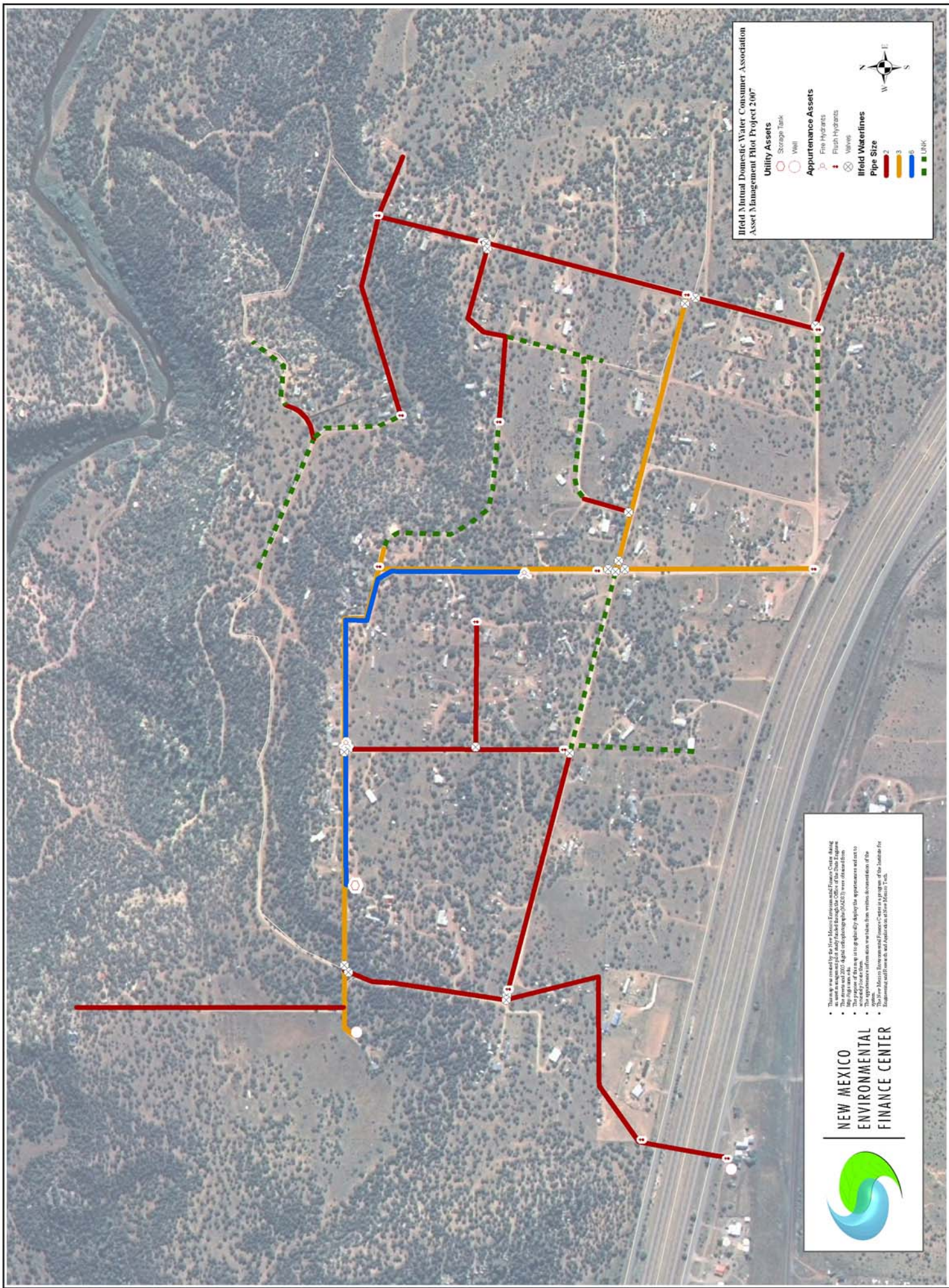
- ASSET MANAGEMENT PLAN

Examples

- Base Map
- Database Excerpt
- Level of Service Agreement

**Irfield Mutual Domestic Water Consumer Association
Asset Management Pilot Project 2007**

- Utility Assets**
- Storage Tank
 - Well
- Appurtenance Assets**
- ⊕ Fire Hydrants
 - ⊕ Valves
- Irfield Waterlines**
- Pipe Size**
- 2
 - 3
 - 6
 - UNK



- This map was created by the New Mexico Environmental Finance Center along with the Irfield Mutual Domestic Water Consumer Association.
- This map and 2007 Asset Management Project (AMS) were prepared from a survey of local lines.
- The purpose of this map is to provide a visual representation of the system. It is not intended to be used for engineering purposes.
- The map was created using GIS software and the location of the assets for this project was determined by field surveys and interviews with the Association.

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Ilfeld MDWCA Asset Inventory

Asset: Well #1

<i>Item</i>	<i>Date Installed</i>	<i>Condition</i>	<i>Notes</i>	<i>Estimated Replacement Date</i>
2" Ball Valve		Good		
Pressure Gauge		Good		
2" Master Meter	1987	Needs Replacement		2002
Sampling Port		Good		
Tank Level Controller	1987	Needs Replacement	not compatible w/ Well # 2 controls	
Chlorine Tank		Excellent	not used	
Metering pump		Excellent	not used	
In tank mixer		Excellent	not used	
Pump				
Motor				
Casing	1957	Fair	See PER	2007

Ilfeld Mutual Domestic Water Consumer Association

Level of Service Agreement with Association Members

Introduction

The Ilfeld Mutual Domestic Water Consumer's Association (IMDWCA) was created to provide water services to the residents of Ilfeld, New Mexico. The IMDWCA consists of two wells, a ground storage tank, and a PVC pipe distribution system, and its source of drinking water is ground water for residential use.

Purpose

As part of IMDWCA's efforts to continue providing outstanding service to its members, the IMDWCA board has elected to implement a level of service agreement. This agreement outlines the criteria or indicators that will help the system determine how best to manage its assets to provide a certain level of service at a reasonable cost.

Level of Service Agreement

Operating Cost/Invoicing

- Current water rates will be made available at the IMDWCA meetings.
- The IMDWCA will strive to read meters between the 1st and the 5th of each month.
- The IMDWCA will strive to distribute invoices no later than the 7th of each month.
- In the case that the meter is inaccessible to the meter reader due to customers' fencing, animals, or other blockage, the customer shall be billed three times the base rate until such time the meter can be accessed. The IMDWCA shall make billing adjustments on the next successful meter reading.
- Shut off notices will be mailed to the delinquent customer 21 days before interruption of services, to allow sufficient time for payment.

Responsiveness

- Respond to service request with 24 hours and repair within 72 hours of notification 90% of the time.
- The IMDWCA will respond to customer complaints within 48 hours during business hours.

Reliability

- The average duration of an unplanned interruption is estimated to be 72 hours for water main line repairs and 72 hours for service line repairs.
- The IMDWCA will work to keep the system operational with service to all consumers a minimum of 99% of each month.

Regulatory Requirements

- The IMDWCA is responsible for monitoring water quality per state and federal requirements.
- The IMDWCA will distribute to its members the Consumer Confidence Report.

Quantity

- The IMDWCA will promote water conservation measures with members.

Quality

- The IMDWCA will strive to continue to provide water that meets all state and federal requirements without any chemical treatment.

Customer Satisfaction

- The IMDWCA will keep members informed on matters pertaining to the water system through its monthly board meetings and through periodic mailings.
- The IMDWCA will strive to meet the customer agreed upon level of service. Customers will be advised of all changes to the level of service before the change is implemented, except in the case of emergency, in which case the customers will be notified as soon as possible.